



Fig.1

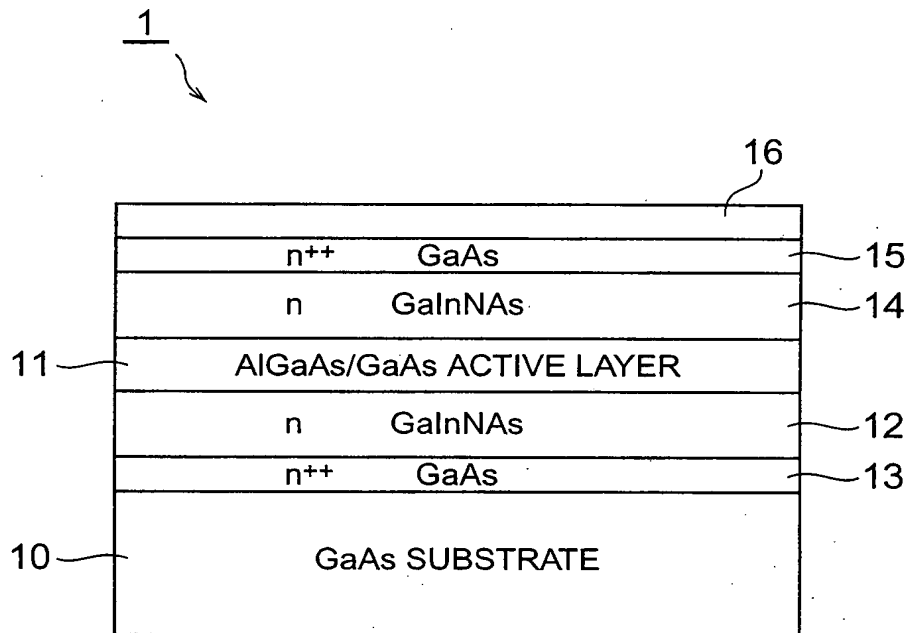


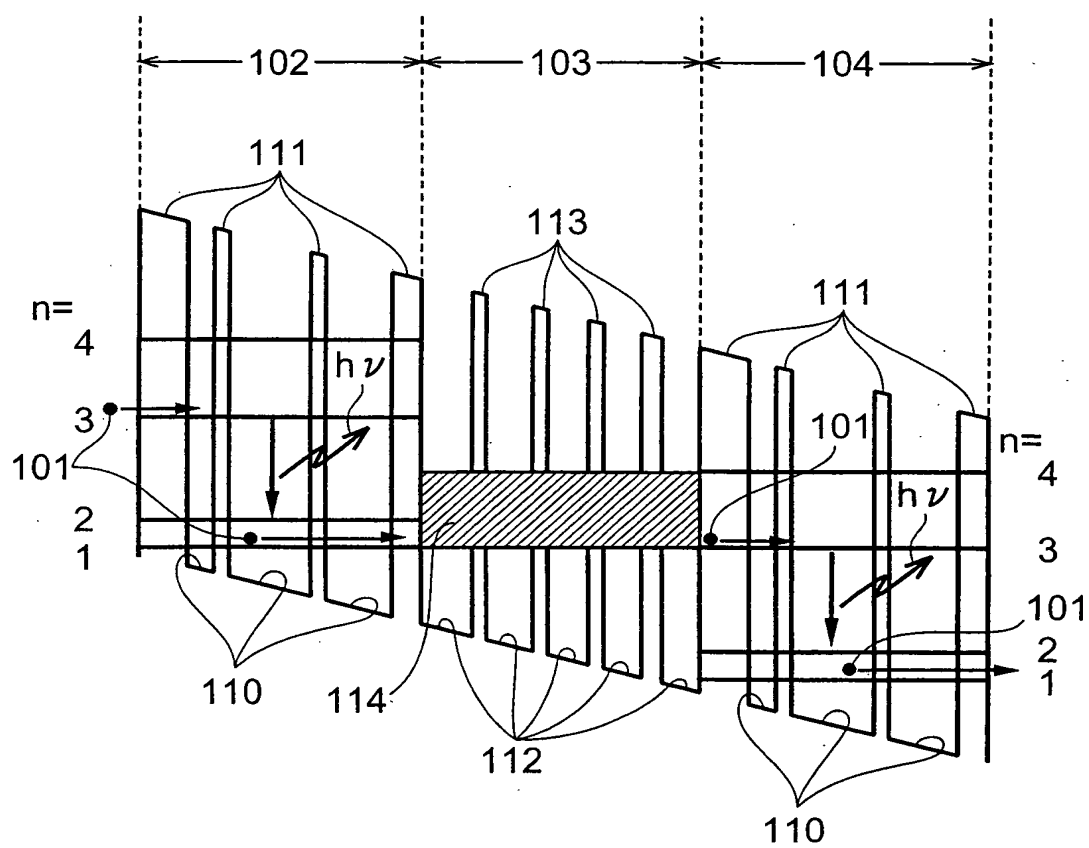
Fig.2

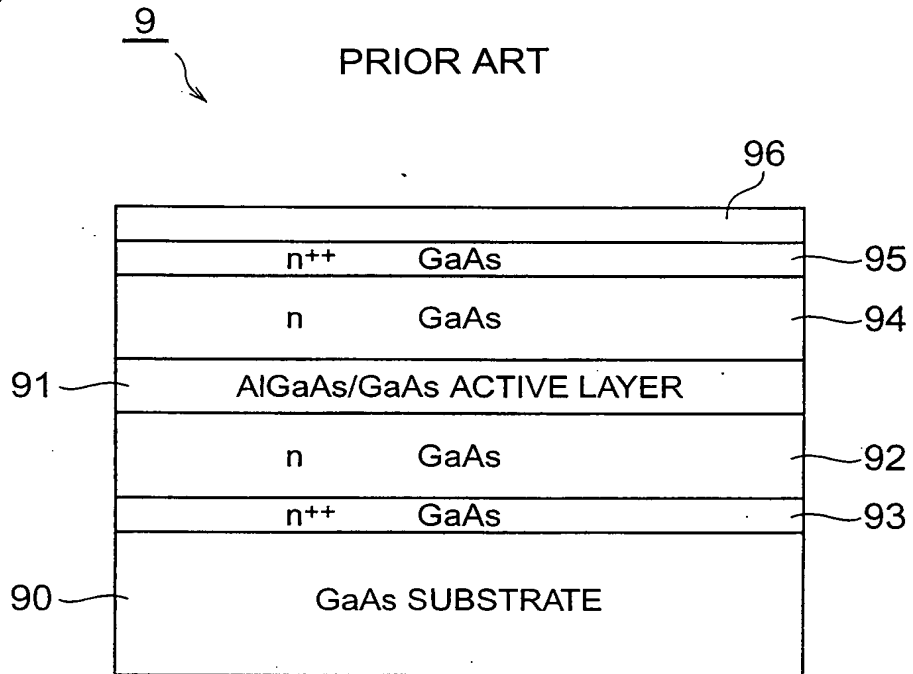
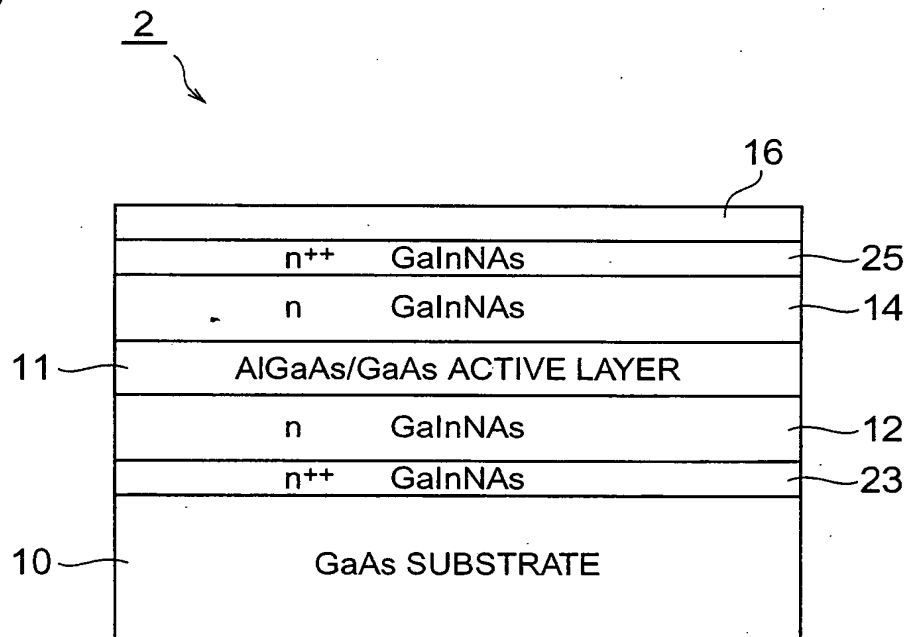
Fig.3**Fig.4**

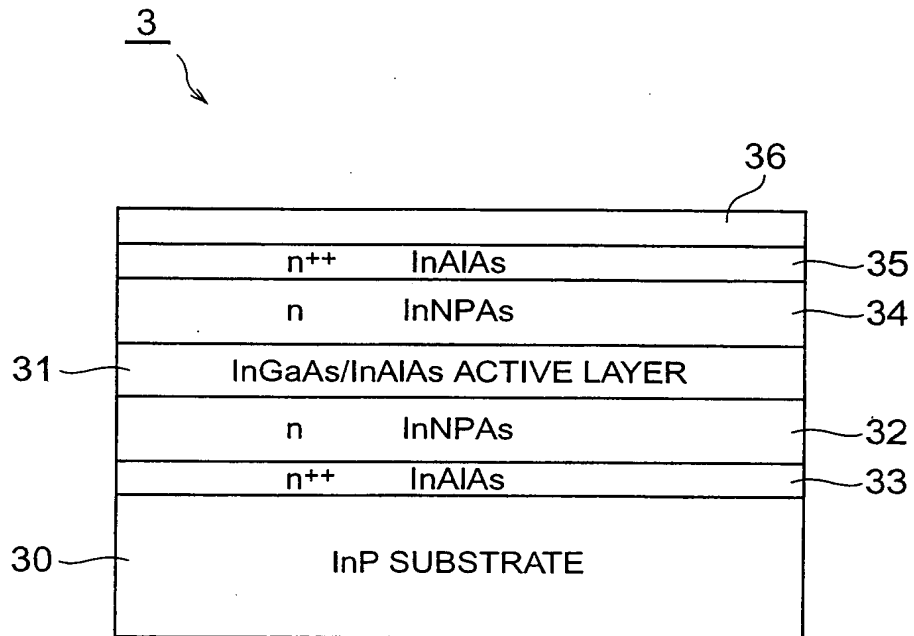
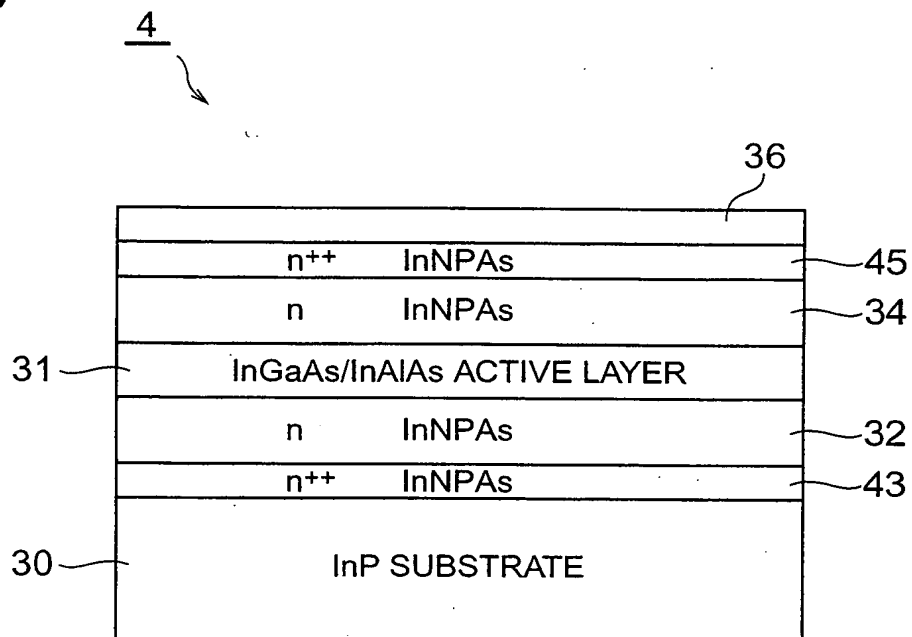
Fig.5**Fig.6**

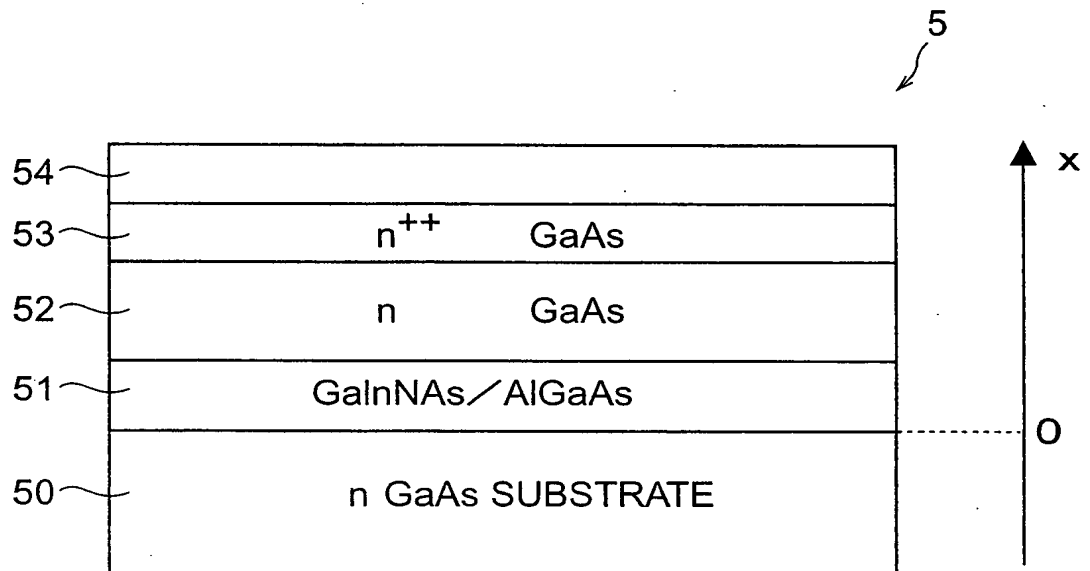
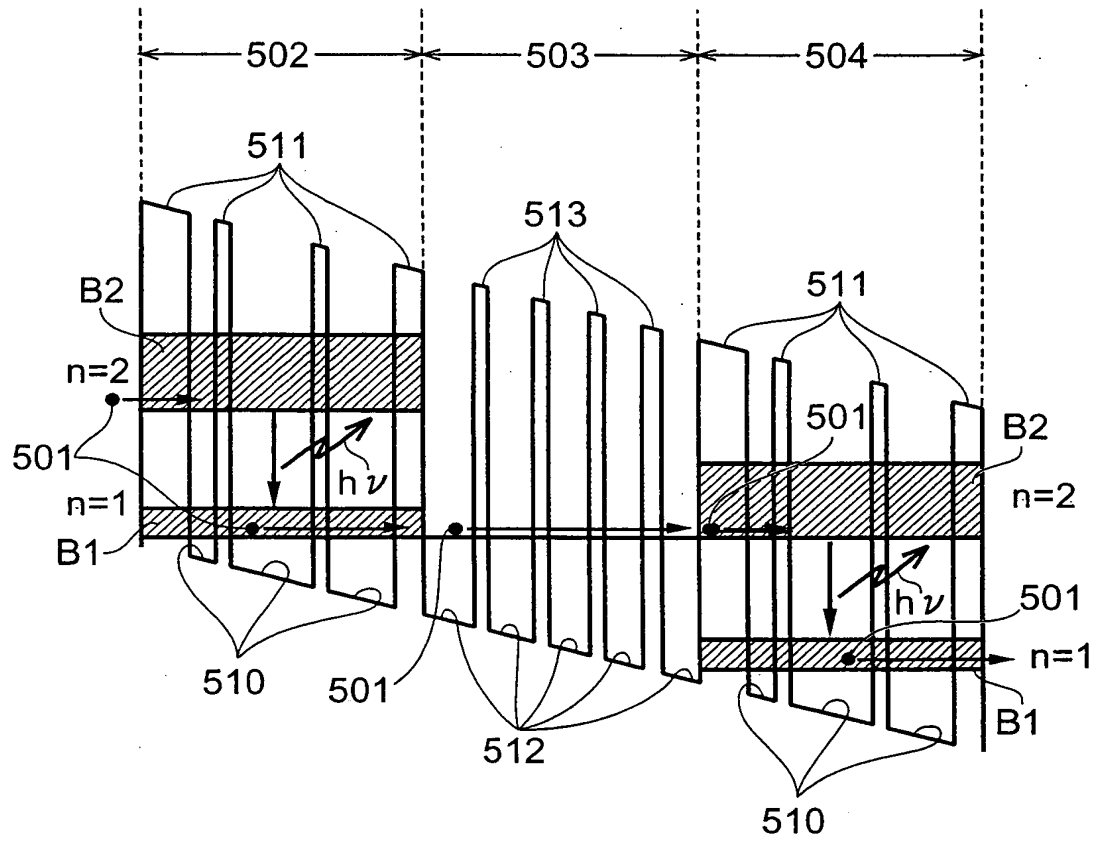
Fig.7

Fig.8

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Fig.9

	LAYER COMPOSITION	THICKNESS(nm)	CARRIER DENSITY (cm^{-3})
INJECTION LAYERS	GaInNAs	2.1	UNDOPE
	AlGaAs	2.5	UNDOPE
	GaInNAs	2.3	1.6×10^{17}
	AlGaAs	2.5	1.6×10^{17}
	GaInNAs	2.3	1.6×10^{17}
	AlGaAs	2.3	1.6×10^{17}
	GaInNAs	2.8	UNDOPE
	AlGaAs	2.0	UNDOPE
	GaInNAs	3.2	UNDOPE
QUANTUM WELL LIGHT EMITTING LAYERS	AlGaAs	3.4	UNDOPE
	GaInNAs	4.0	UNDOPE
	AlGaAs	1.7	UNDOPE
	GaInNAs	4.9	UNDOPE
	AlGaAs	2.0	UNDOPE
	GaInNAs	1.5	UNDOPE
	AlGaAs	5.8	UNDOPE

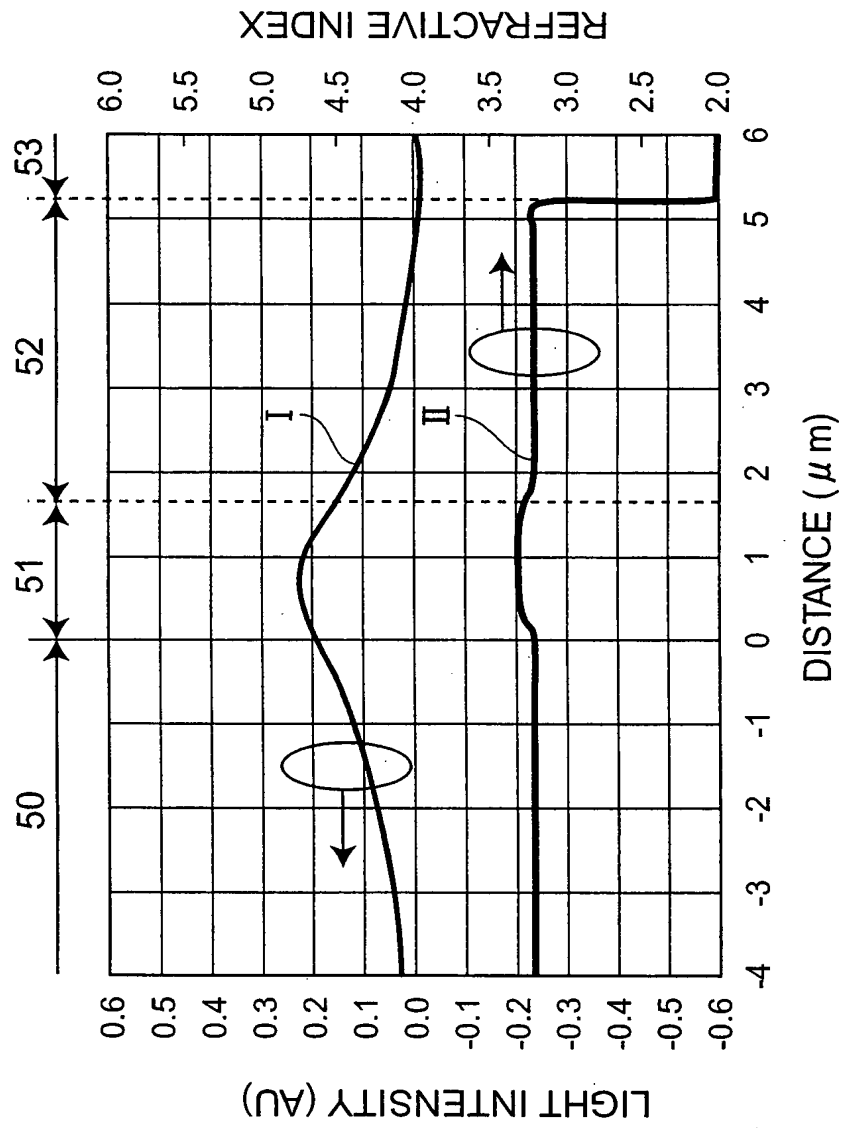
Fig.10

Fig.11

PRIOR ART

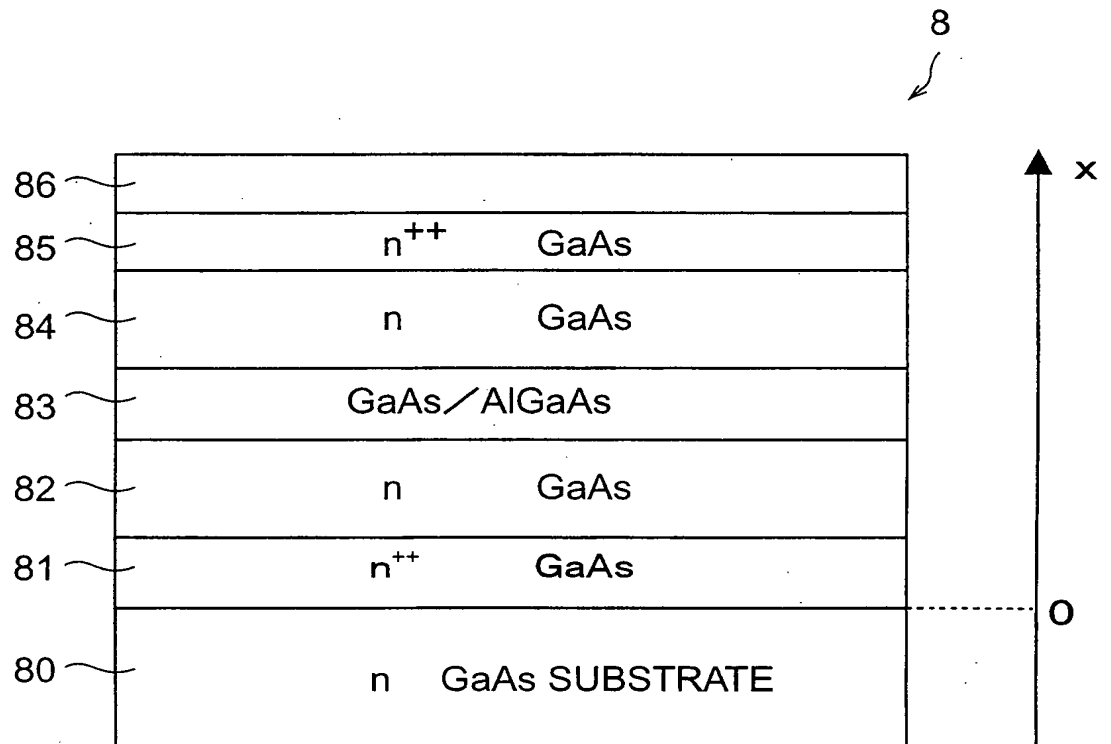
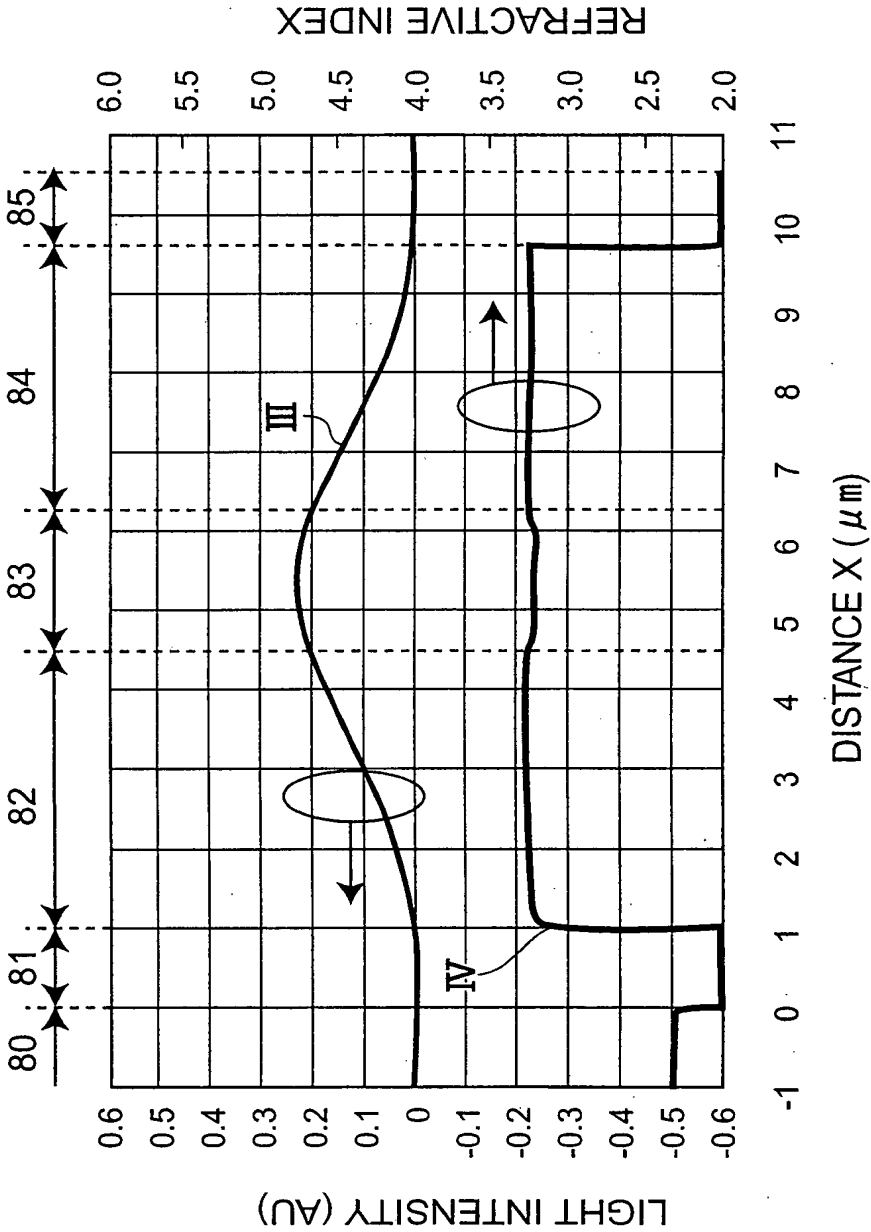


Fig.12 PRIOR ART

	LAYER COMPOSITION	THICKNESS(nm)	CARRIER DENSITY (cm ⁻³)
INJECTION LAYERS	GaAs	2.1	UNDOPE
	AlGaAs	2.5	UNDOPE
	GaAs	2.3	1.6×10^{17}
	AlGaAs	2.5	1.6×10^{17}
	GaAs	2.3	1.6×10^{17}
	AlGaAs	2.3	1.6×10^{17}
	GaAs	2.8	UNDOPE
	AlGaAs	2.0	UNDOPE
	GaAs	3.2	UNDOPE
QUANTUM WELL LIGHT EMITTING LAYERS	AlGaAs	3.4	UNDOPE
	GaAs	4.0	UNDOPE
	AlGaAs	1.7	UNDOPE
	GaAs	4.9	UNDOPE
	AlGaAs	2.0	UNDOPE
	GaAs	1.5	UNDOPE
	AlGaAs	5.8	UNDOPE

PRIOR ART

Fig.13



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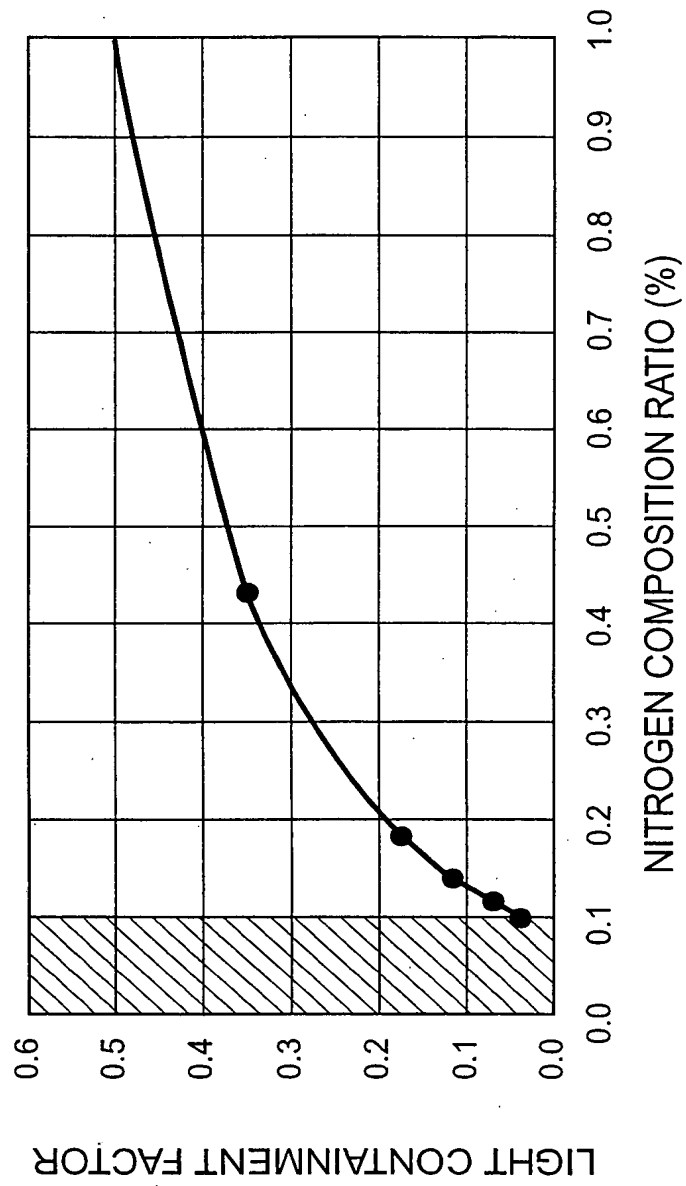
**Fig.14**

Fig.15

PRIOR ART

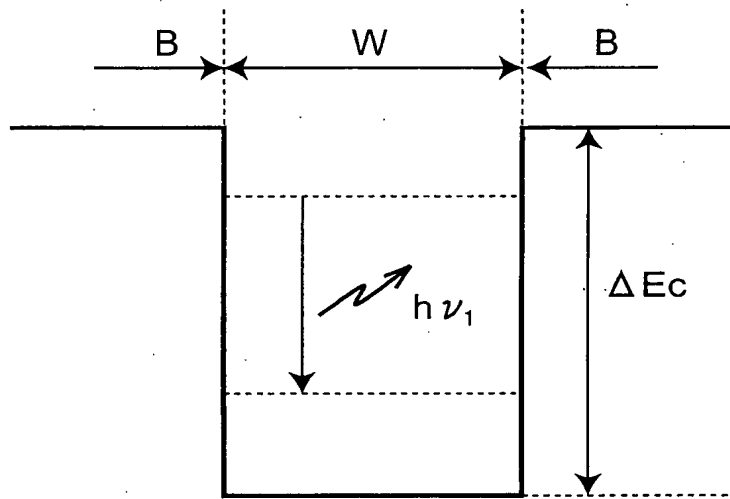


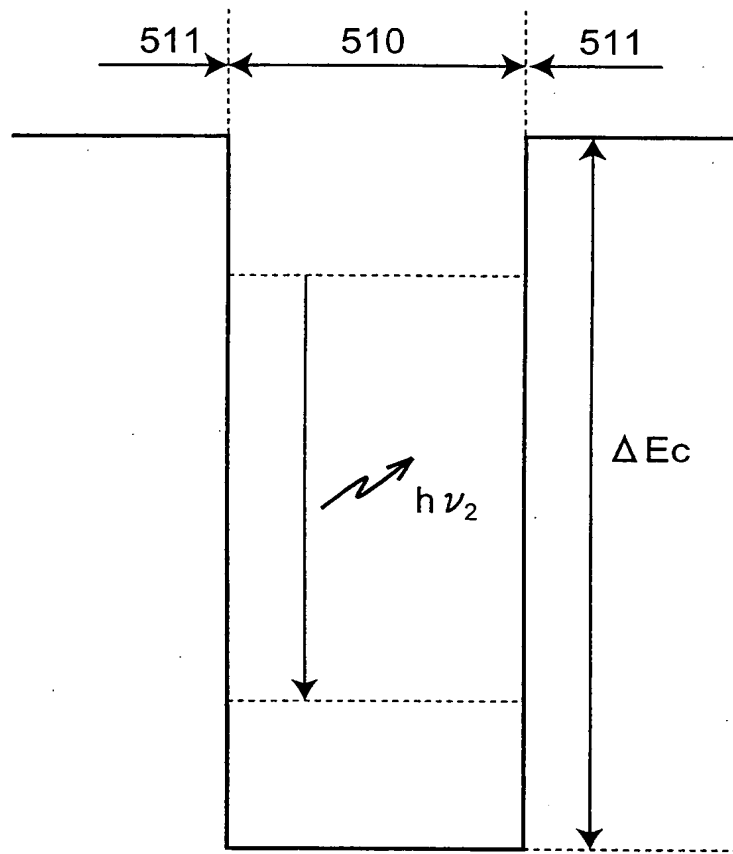
Fig.16

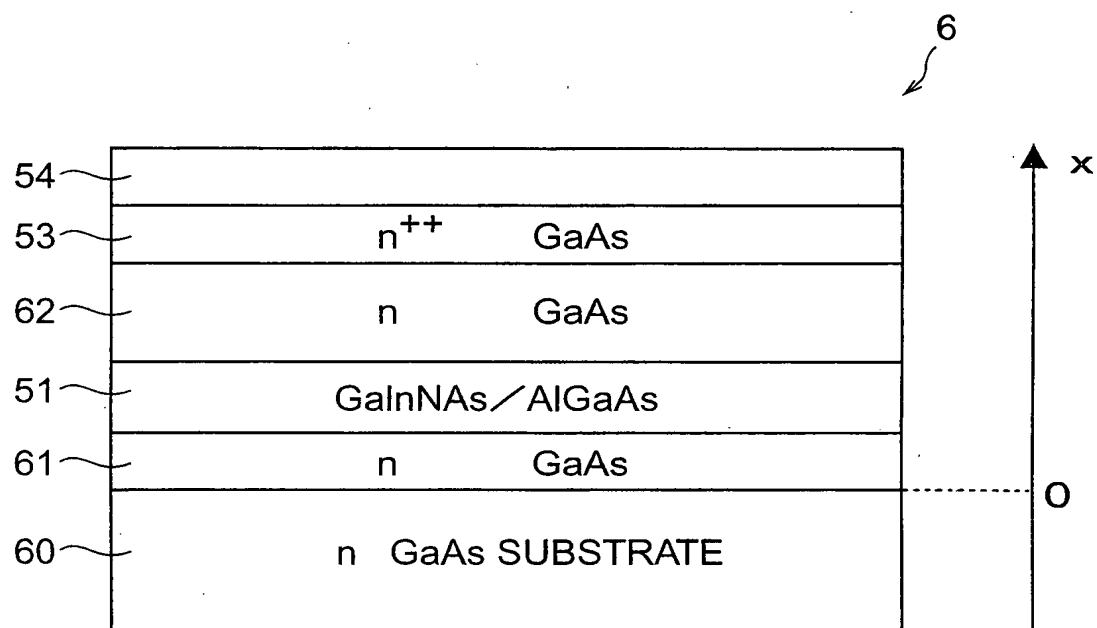
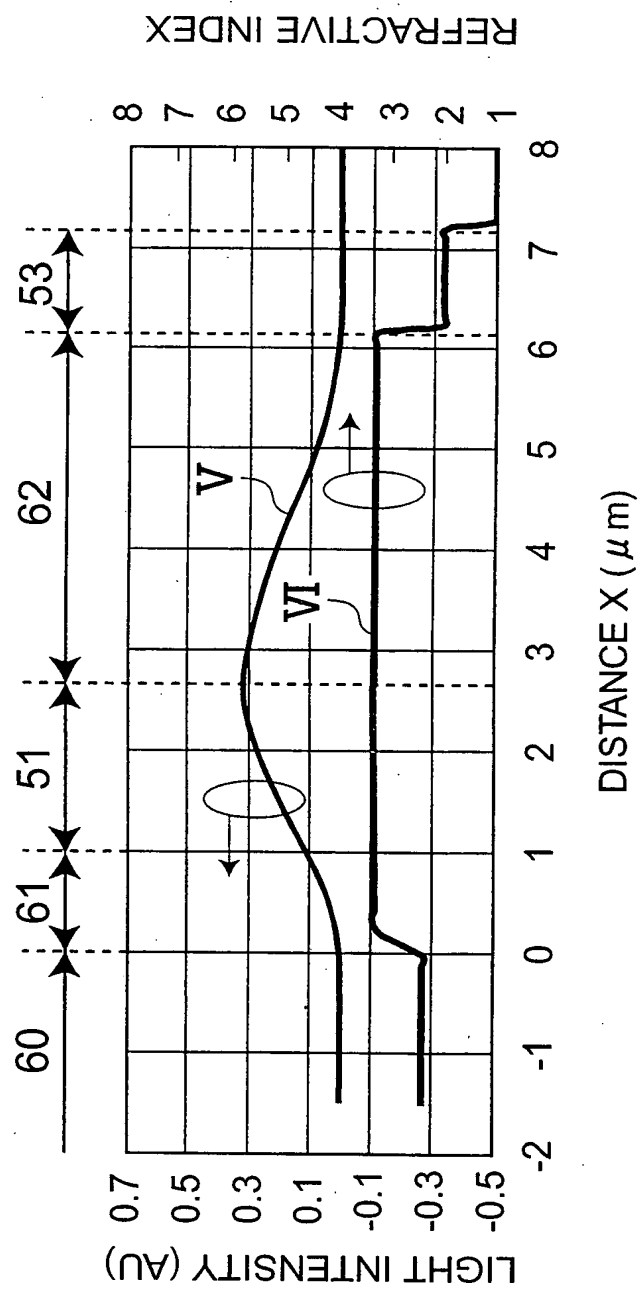
Fig.17

Fig.18

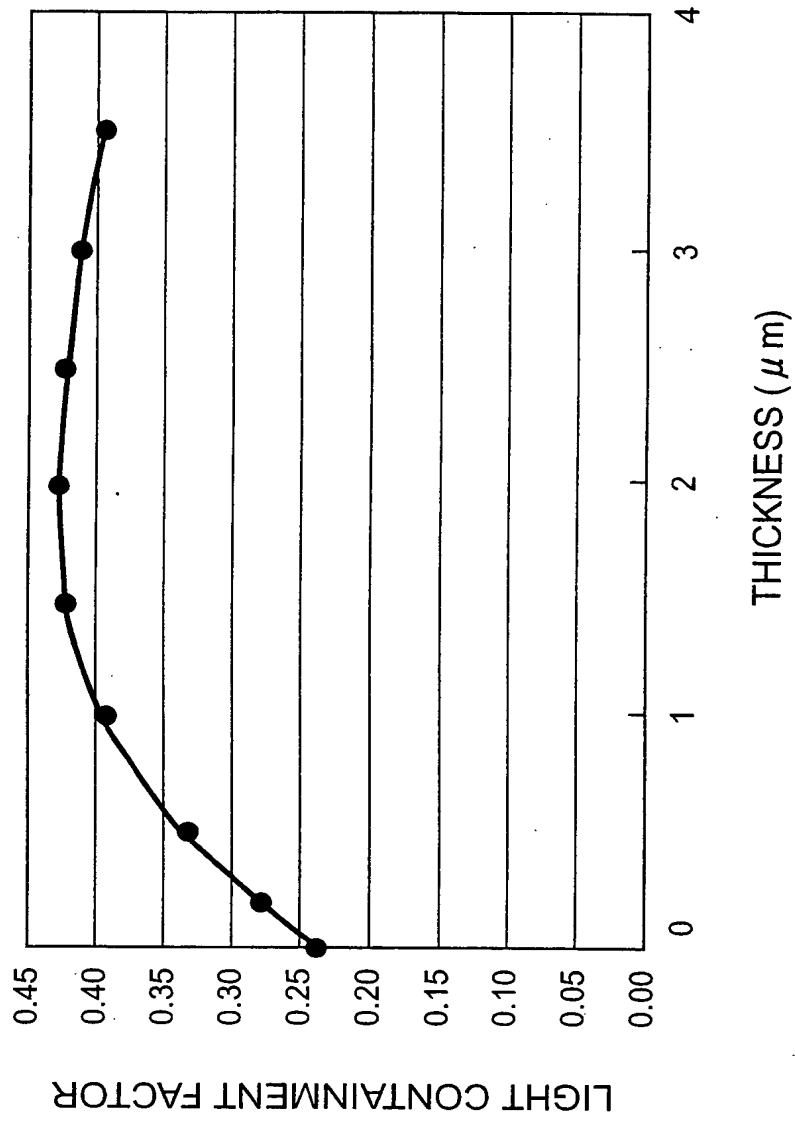
**Fig.19**

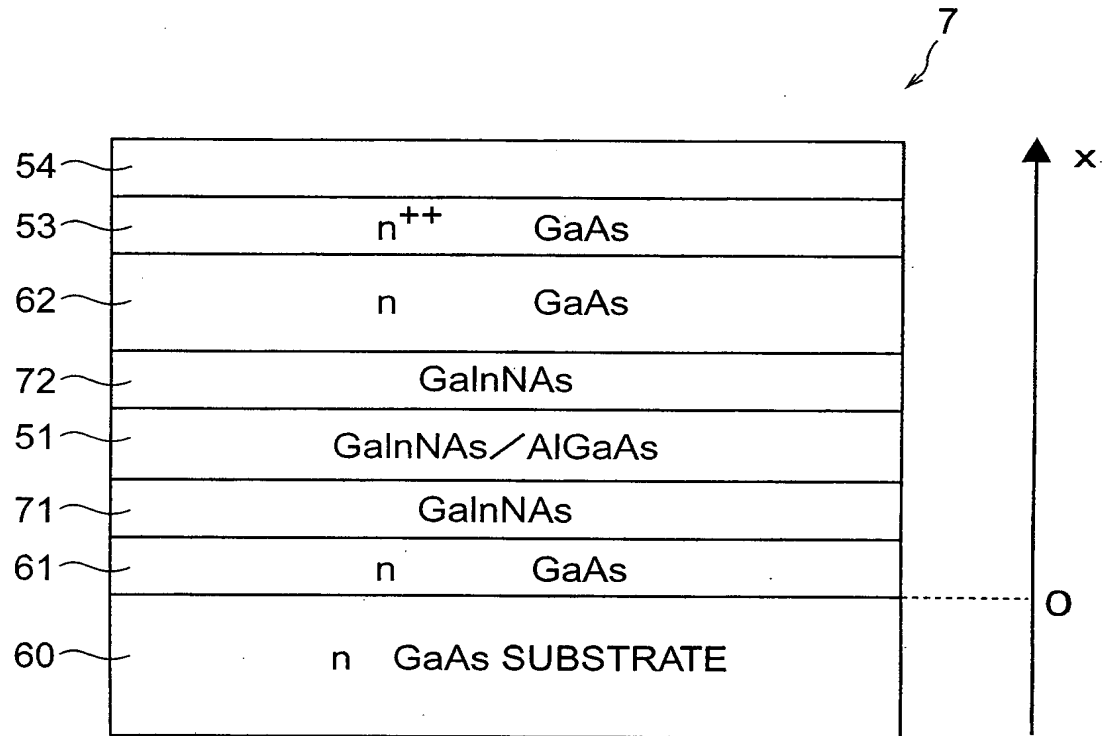
Fig.20

Fig.21